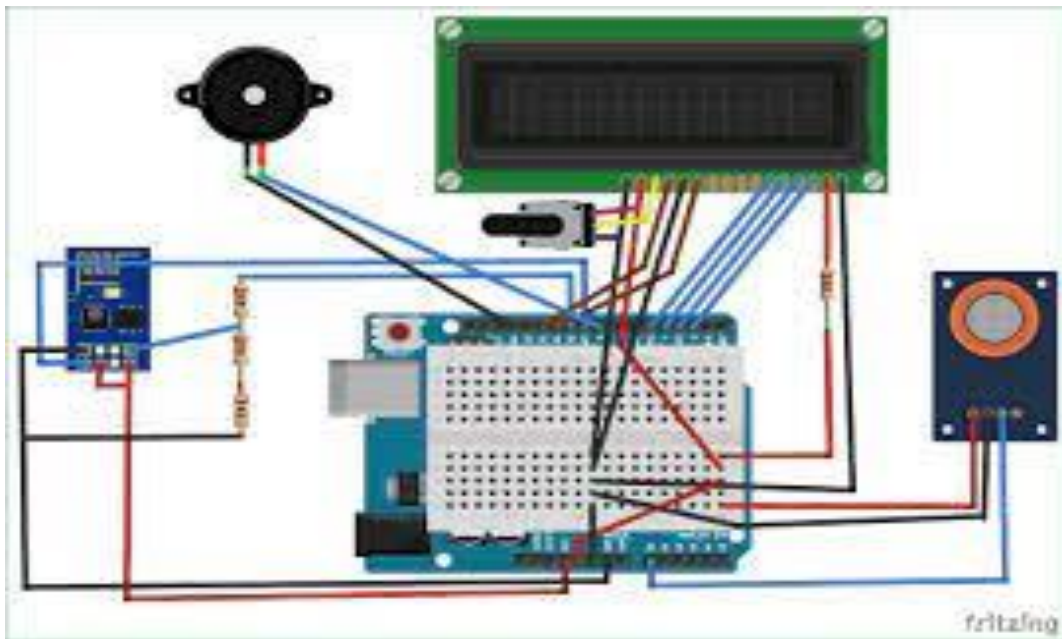# AIR QUALITY MONITORING USING IOT

PHASE: 2 INOVATION

CIRCUIT DIAGRAM:

GAS SENSOR

Gas sensors are devices that can detect the presence and concentration of various hazardous gases and vapours, such as toxic or explosive gases, volatile organic compounds (VOCs), humidity, and odours.

ARDINO UNO

The Arduino IoT Cloud is a online platform that makes it easy for you to create, deploy and monitor IoT projects. Arduino Cloud IoT Cheat Sheet. Learn how to set up the Arduino Cloud IoT, get a quick overview of the compatible boards, the API, configuration, Things, variables and dashboards

.

LCD DISPLAY

LCD (Liquid Crystal Display) is a type of flat panel display which uses liquid crystals in its primary form of operation. LEDs have a large and varying set of use cases for consumers and businesses, as they can be commonly found in smartphones, televisions, computer monitors and instrument panels.

POTENTIOMETER

What is a potentiometer used for? A potentiometer is used **as a voltage divider or variable resistor in a circuit**. Some applications include dimmer switches for lights, brightness controls in televisions, and faders in audio equipment.

JUMPER WIRES

Jumper wires are simply wires that have connector pins at each end, allowing them to be used **to connect two points to each other without soldering**. Jumper wires are typically used with breadboards and other **prototyping tools in order to make it easy to change a circuit as** needed.

BLOCK DIAGRAM
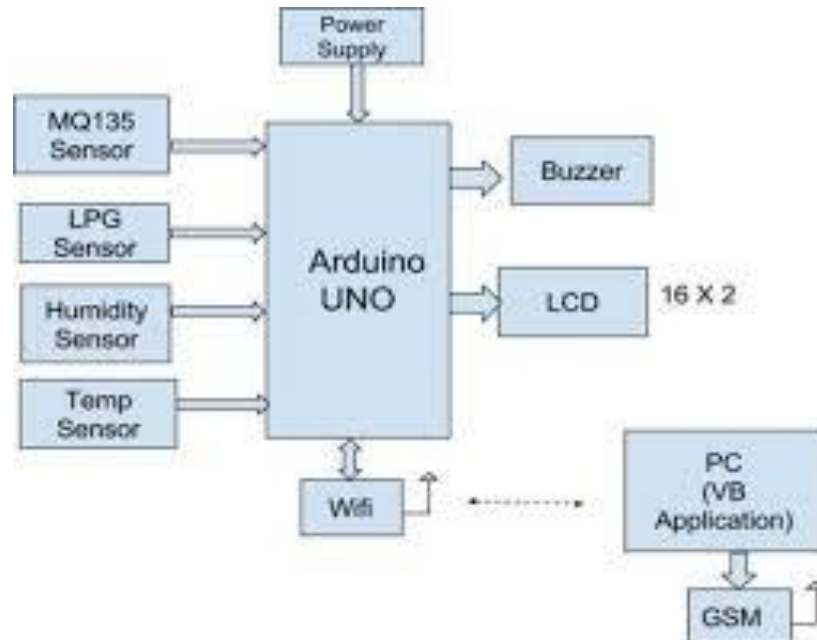
Sensors:

Sensors are the primary components of IoT-based air pollution monitoring systems. They measure various air quality parameters such as particulate matter, carbon monoxide, sulphur dioxide, and nitrogen oxides. The sensors can be classified into two categories: physical and chemical sensors. Physical sensors measure parameters such as temperature, humidity, and pressure, while chemical sensors measure air pollutants.

Microcontroller:

The microcontroller is the brain of IoT-based air pollution monitoring systems. It receives data from the sensors, processes it, and sends it to the cloud server. The microcontroller is usually a microprocessor such as Arduino, Raspberry Pi, or similar devices.

Communication Module:

The communication module is responsible for transmitting data from the microcontroller to the cloud server. Communication modules can use various wireless technologies such as Wi-Fi, Bluetooth, or cellular networks.

Cloud Server:

The cloud server is a centralized platform for storing, analysing, and sharing air quality data. It collects data from the communication module and stores it in a database. The cloud server also provides web and mobile applications for users to access the data.

Power Supply:

IoT-based air pollution monitoring systems require a power supply to operate. In case of permanent installations external power supply is provided and batteries are provided for portable devices.

FLOW CHART
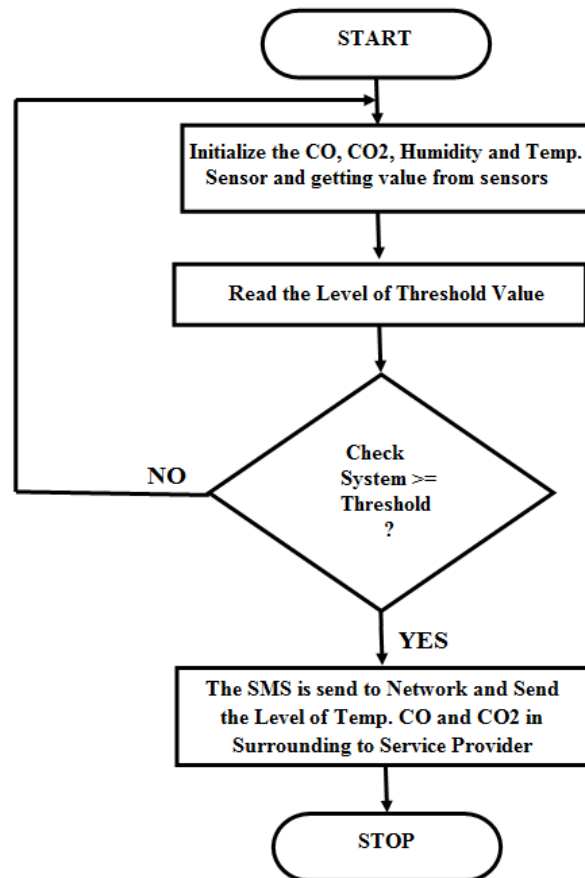
APPLICATION OF AIR QUALITY MONITORING

Air quality sensors are devices used to detect contaminants in the air. This includes particulates, pollutants and noxious gases that may be harmful to human health. They are used in applications like air quality monitoring, gas detection in industry, combustion controllers and oxygen generators in aircraft.

REASON FOR AIR POLLUTION

Reasons for High Air Pollution in India

1. Poor Quality of Fuel
2. Old Process Technology
3. Wrong Sitting of Industries
4. No Pollution Preventive Step in Early Stage of Industrialization
5. Poor Vehicle Design
6. Uncontrolled Growth of Vehicle Population
7. No Pollution Prevention and Control System in Small/Medium Scale Industry
8. Poor Compliance of Standard in Small/Medium Scale Industries